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OBLON, SPIVAK, MCCLELLAND MAIER & NEUSTADT, L.L.P. 1940 DUKE STREET ALEXANDRIA, VA 22314				
EXAMINER NELSON, MICHAEL B				
ART UNIT		PAPER NUMBER		
1794				
NOTIFICATION DATE		DELIVERY MODE		
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Please find below and/or attached an Office communication concerning this application or proceeding.

The time period for reply, if any, is set in the attached communication.

Notice of the Office communication was sent electronically on above-indicated "Notification Date" to the following e-mail address(es):

patentdocket@oblon.com
oblonpat@oblon.com
jgardner@oblon.com

Office Action Summary

Application No.

10/519,098

Applicant(s)

FLEURY ET AL.

Examiner

MICHAEL B. NELSON

Art Unit

1794

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --
Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

- 1) ☒ Responsive to communication(s) filed on 04 September 2009.
- 2a) ☒ This action is **FINAL**. 2b) ☐ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

- 4) ☒ Claim(s) 1, 2, 4-9, 13, 15, 19-21 and 23 is/are pending in the application.
- 4a) Of the above claim(s) 22 is/are withdrawn from consideration.
- 5) ☐ Claim(s) _____ is/are allowed.
- 6) ☒ Claim(s) 1, 2, 4-9, 13, 15, 19-21 and 23 is/are rejected.
- 7) ☐ Claim(s) _____ is/are objected to.
- 8) ☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☐ The drawing(s) filed on _____ is/are: a) ☐ accepted or b) ☐ objected to by the Examiner.
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).
Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

- 12) ☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☐ All b) ☐ Some * c) ☐ None of:
1. ☐ Certified copies of the priority documents have been received.
 2. ☐ Certified copies of the priority documents have been received in Application No. _____.
 3. ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

* See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

- 1) ☐ Notice of References Cited (PTO-892)
- 2) ☐ Notice of Draftperson's Patent Drawing Review (PTO-948)
- 3) ☐ Information Disclosure Statement(s) (PTO/SB/08)
Paper No(s)/Mail Date _____
- 4) ☐ Interview Summary (PTO-413)
Paper No(s)/Mail Date _____
- 5) ☐ Notice of Informal Patent Application
- 6) ☐ Other: _____

DETAILED ACTION

Response to Amendment

1. Applicant's amendments filed on 09/04/09 have been entered. Claims 1, 2, 4-9, 13, 15, 19-21 and 23 are currently under examination on the merits. Claim 22 is withdrawn.

Claim Rejections - 35 USC § 102

2. The following is a quotation of the appropriate paragraphs of 35 U.S.C. 102 that form the basis for the rejections under this section made in this Office action:

A person shall be entitled to a patent unless –

(b) the invention was patented or described in a printed publication in this or a foreign country or in public use or on sale in this country, more than one year prior to the date of application for patent in the United States.

3. Claims 1, 2, 4-9, 13, 15, 19-21 and 23 rejected under 35 U.S.C. 102(b) as being anticipated by Joret et al. (FR 2,800,998), see English language equivalent U.S. 6,924,037.

Regarding claim 1, Joret et al. discloses a transparent substrate, comprising on at least one of its faces an antireflection coating, particularly at normal incidence made of a multilayer (A) of thin layers made of dielectrical material with alternatively high and low refractive indexes, characterized in that the multilayer comprises, in succession: a high-index first layer (1), with a refractive index n_1 of between 1.8 and 2.2 and geometrical thickness of between 5 and 50 nm, a low-index second layer (2), with a refractive index n_2 of between 1.35 and 1.65 and a geometrical thickness e_2 of between 5 and 50 nm, a high-index third layer (3) with a refractive index n_3 of between 1.8 and 2.2 and a geometrical thickness e_3 , a low-index depth fourth layer (4) with a refractive index n_4 and a geometrical thickness e_4 ;

(See Abstract and claim 1 of Joret et al. All the limitations are read upon practically verbatim with only the third and fourth layer thickness ranges not exactly

matching. The disclosed third layer thickness (70-120 nm) substantially covers the claimed range with both endpoints lying within the claimed range. The disclosed fourth layer thickness (at least 80 nm) substantially covers the claimed range with the lower endpoint (80 nm) lying within the claimed range. Joret et al. discloses that the materials for the first and third layers can be more than one oxide (i.e. a mixed oxide) selected from a group containing ZnO and SnO, (C4, L32-38). Joret et al. also discloses that the layers of the stack can be made to be slightly conductive, for example by doping, in order to impart antistatic functionality (C8, L15-25). Regarding the reflectance limitation: See Examples 1-13, C13, L5-20, the reflectance of example 4 is 3% less than that of the uncoated substrate, (example 1, C9, L35-45) at normal incidence.)

Regarding claims 2, 4-7, Joret et al. discloses all of the limitations as set forth above. Additionally the reference discloses a transparent substrate which reads on the limitations of claims 2, 4-7

(See C3, L65-C4, L15, the disclosed ranges exactly match the ranges of instant claims 2, 4 and 5. The lower endpoint of the most preferred disclosed thickness of the third layer (at least 75 nm), lies within the claimed range of instant claim 6. The endpoints of the most preferred thickness of the fourth layer (80-110 nm), lie within the claimed range of instant claim 7. See Abstract, the disclosed range for the second and third layer refractive indexes exactly matches the limitations of instant claims 3.)

Regarding claims 8 and 9, Joret et al. discloses all of the limitations as set forth above.

Additionally the reference discloses a transparent substrate wherein

- wherein the high-index first layer (1) and the low-index second layer (2) are replaced by an intermediate-index single layer (5) n_s of between 1.65 and 1.80 and preferably having an optical thickness e_{pot5} of between 50 and 140 nm, preferably between 85 and 120 nm.
- wherein the intermediate-index layer (5) is based on a mixture of, on the one hand, silicon oxide and, on the other hand, at least one metal oxide chosen from tin oxide, zinc oxide, titanium oxide or is based on a silicon oxynitride or oxycarbide and/or aluminum oxynitride.

(See C4, L15-35. The first and second layers are disclosed as being combined into an intermediate layer having exactly the same thickness and refractive index as the claimed ranges. The same materials for the intermediate layer are also disclosed.)

Regarding claim 13, Joret et al. discloses all of the limitations as set forth above.

Additionally the reference discloses a transparent substrate which reads on the limitation of claim 13.

(See C4, L30-40, the materials for the first and third layers are, inter alia, silicon nitrides, as in instant claim 10. See C4, L60-C5, L5, the first or the third layers are disclosed as being made of $\text{SnO}_2/\text{Si}_3\text{N}_4$ or $\text{Si}_3\text{N}_4/\text{SnO}_2$ bilayers. See C5, L15-30, the second and fourth layers are disclosed as being made of, inter alia, silicon oxide. See C5, L5-15, the substrate is disclosed as being made of, inter alia, clear glass.)

Regarding claim 15 Joret et al. discloses all of the limitations as set forth above. Additionally the reference discloses a transparent substrate which reads on the limitations of claim 15.

(See Examples 1-13, C13, L5-20, the reflectance of example 4 is 3% less than that of the uncoated substrate, (example 1, C9, L35-45) and the b* value is negative and in claim 15. See C4, L30-40, the materials for the first and third layers are, inter alia, silicon nitrides, which is disclosed as giving the invention heat treatment abilities (C15, L35-40). See C13, L20-30, the disclosed TABER test results of the examples are less than 3%, as in claims 16 and 17.)

Regarding claims 19-21 and 23, Joret et al. discloses all of the limitations as set forth above. Additionally the reference discloses a transparent substrate which reads on claims 19-21 and 23.

(See C6, L40-55, a multiple glazed unit is disclosed with two glass substrates with a thermoplastic PVB layer in between and with the disclosed four layered antireflective structure (A) on one side and on the other side a different antireflective structure (B), which is disclosed as meeting the limitations of the first embodiment of the second antireflective coating from instant claim 20 (i.e. single low-index layer of silicon oxide with the instant claimed refractive index ranges deposited by CVD, C7, L35-C8, L10). Also see C5, L25-35, a disclosed use of the substrate is for a shop counter.)

Response to Arguments

4. Applicant's arguments of 09/04/09 have been considered but are not persuasive.

5. Applicant argues that the instant “doped mixed oxide” is different from the “one or more oxides” which can be doped of Joret. The examiner does not find applicant’s arguments persuasive. Joret discloses one or more oxides of zinc and tin and therefore, absent any evidence that “mixed oxide” means something more specific than a mixture of oxides, Joret discloses a mixed oxide.

6. Joret later discloses that the oxide layers can be doped. While applicant argues that these disclosures are so separate to constitute a deficiency under a 102 rejection the examiner disagrees. Joret plainly discloses mixing two oxides and then independently discloses doping the oxide layers (thus a doped mixed oxide) for antistatic qualities. Applicant appears to be arguing that the term “doped mixed oxide” in the claims is not related to a series of separate processes but rather one special type of process that is known in the art. However applicant has provided no evidence that this term, as it stands in the claim, has a special significance in the art.

7. Applicant makes unsupported allegations related to how a mixed oxide changes if the oxide is a mix of two single oxides or one phase of a binary oxide but does not provide any citation to Joret to show which type of mixing Joret does (i.e. the applicant just alleges that Joret does the former). This point is moot since applicant has not provided any reason to conclude that the doped mixed oxide of the claims relates to the single phase binary oxide. Accordingly, the fact that Joret mixes the oxides at all qualifies its resulting oxide as being a mixed oxide.

8. Applicant then makes arguments against the incident angle of the table in column 13 of Joret. The examiner notes that at C12, L65-67, Joret discloses that 0 degrees is at “normal incidence” (as in the instant claims). Hence if applicant is arguing that normal incidence is a term of the art, then Joret seems to be using it in the same manner as the applicant. Moreover,

even if the applicant is correct that Joret is measuring at a different angle, the examiner would contend that, given the substantially similar materials and thickness in the stack of Joret, it would possess the instantly claimed properties.

Conclusion

9. **THIS ACTION IS MADE FINAL.** Applicant is reminded of the extension of time policy as set forth in 37 CFR 1.136(a).

A shortened statutory period for reply to this final action is set to expire THREE MONTHS from the mailing date of this action. In the event a first reply is filed within TWO MONTHS of the mailing date of this final action and the advisory action is not mailed until after the end of the THREE-MONTH shortened statutory period, then the shortened statutory period will expire on the date the advisory action is mailed, and any extension fee pursuant to 37 CFR 1.136(a) will be calculated from the mailing date of the advisory action. In no event, however, will the statutory period for reply expire later than SIX MONTHS from the mailing date of this final action.

10. Any inquiry concerning this communication or earlier communications from the examiner should be directed to MICHAEL B. NELSON whose telephone number is (571) 270-3877. The examiner can normally be reached on Monday through Thursday 6AM-4:30PM.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, David Sample can be reached on (571) 272-1376. The fax phone number for the organization where this application or proceeding is assigned is 571-273-8300.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free). If you would like assistance from a USPTO Customer Service Representative or access to the automated information system, call 800-786-9199 (IN USA OR CANADA) or 571-272-1000.

/David R. Sample/
Supervisory Patent Examiner, Art Unit 1794

/MN/
12/04/09